

REMARKS

Claims 1-24 are pending. Claims 1 and 21 are amended. Claims 1-24 are rejected. Reconsideration and allowance is requested based on the amendments to the claims and the following remarks.

Claim Rejections under 35 U.S.C. §101

Claims 21-24 are rejected under 35 U.S.C. §101. Claim 21 has been amended to comply with the Office Action by adding "computer readable." Claims 22-24 depend from claim 21. Withdrawal of the rejections is requested.

Claim Rejections under 35 U.S.C. §112

Claims 1-12 are rejected under 35 U.S.C. §112, ¶ 2, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Office Action states there is no antecedent basis for "said re-scheduling multiplexer" in line 3 of claim 1. Claim 1 has been amended to comply with the Office Action. Withdrawal of the rejections is requested.

Claim Rejections under 35 U.S.C. §103(a)

Claims 1-3, 9-11, 17, 18, 21, 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Merchant et al. U.S. Pat. No. 6,163,838 ("Merchant") in view of Sager et al. U.S. Pat. No. 6,256,745 ("Sager") and in further view of Hammarlund et al. U.S. Pat. No. 6,912,648 ("Hammarlund"). Applicants respectfully traverse the rejections.

Consider a portion of claim 9, which recites in part:

a re-scheduler having a first input coupled to an instruction queue, a second input coupled to a **replay unit**, and an output;

a scheduler coupled to said re-scheduler output;

...

wherein said re-scheduler comprises:

...

a delay unit coupled to said re-scheduler device to store **wait history** for said instruction;

The Office Action admits on page 4 that Merchant does not disclose "**a delay unit** coupled to said re-scheduler device to store **wait history** for said instruction." The Office Action states that a latency vector as taught by Sager is equivalent to the "**delay unit**." Applicants disagree. The latency vector of Sager is used for determining the number of cycles to delay before writing to a write port. (Sager, Col. 14, 52-55). In contrast, the "**wait his-**

tory" is described in one embodiment of the invention of claim 9 as "Each instruction carries additional information with it that specifies how long it is likely to wait in the scheduler before scheduling based on previous dispatches and executions of the instruction." (Application, ¶ 22, Lines 1-3). One skilled in the art would not include the latency vector of Sager in the definition of a **"wait history."**

Additionally, the Office Action states that the "re-scheduler" is disclosed by element 72 of FIG. 3 of Merchant. But, element 72 does not have an input of a **"replay unit."** Element 72 has a "hit/miss logic" which one skilled in the art would not include in the definition of a "replay unit." Further, the Applicants respectfully assert that equating element 72 of FIG. 3 of Merchant with the "re-scheduler" of the Application as illustrated in FIG. 3 of the Application fails because the "re-scheduler" of Application is placed before the scheduler in the instruction queue both in FIG. 3 and by the limitations of the elements of claim 9. (See for example "a scheduler coupled to said re-scheduler output" and "a re-scheduler having ... a second input coupled to a replay unit" Application, Claim 9).

Finally, Hammarlund fails to remedy these deficiencies. Hammarlund is a method for replay in a processor whereas the invention of claim 9 is for reducing the latencies in scheduling instructions. (Abstract, Hammarlund and Abstract, Application).

Summary

Therefore, Merchant, Sager, and Hammarlund do not disclose or suggest either alone or in any combination the elements of claim 9. As claims 1, 17, and 21 were treated together with claim 9 in the Office Action, the rejections of claims 1 and claim 17 are traversed for at least the same reasons as for claim 9. Further, since claims 2-7 depend from claim 1, the rejections of claims 2-7 are traversed for at least the same reasons as for claim 1; and since and claims 10-16 depend from claim 9, the rejections of claims 10-16 are traversed for at least the same reasons as for claim 9; and since claims 18-20 depend from claim 17, the rejections of claims 18-20 are traversed for at least the same reasons as for claim 17; and since claims 22-24 depend from claim 21, the rejections of claims 22-24 are traversed for at least the same reasons as for claim 21.

CONCLUSION

All outstanding rejections have been overcome. It is respectfully submitted that, in view of the foregoing remarks, the Application is in condition for allowance. Issuance of a Notice of Allowance is earnestly solicited.

The Examiner is invited to call the undersigned at (202) 220-4228 to discuss any information concerning this application.

The Office is hereby authorized to charge any fees or credit any overpayment to Deposit Account No. 11-0600.

Respectfully submitted,

Date: December 31, 2007

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